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Community-based adaptation to climate change: the concept, challenges and way forward

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Abstract
The concept of adaptation to climate change has gained strong momentum worldwide since its emergence in the early 1990s, particularly in recent years. Regardless of the outcome of ongoing international climate negotiations, adaptation to climate change is particularly important for poor communities and those vulnerable to various climate hazards, such as flooding, drought, landslides and cyclones/hurricanes. Owing to the unavoidably local nature of adaptation, one must consider a series of activities that are deeply rooted at the community level. By first visiting the origin and concepts of adaptation and vulnerability, this paper examines the concept, existing lessons and challenges of the relatively new practice of community-based adaptation to climate change (CBA). Although the activities take place at the community level, in order to go beyond the anecdotal or a mere compilation of micro-studies, this paper discusses important issues relating to CBA, including the flow of official development assistance, the importance and involvement of local organizations, civil society participation and community self-mobilization, all of which are essential to ensure the sustainability of CBA. By referring to several case studies from an actual CBA program, the paper discusses the challenges facing current CBA practices and presents suggestions for its successful implementation.

Keywords
Adaptation to climate change, community-based adaptation, local institutions, community mobilization.

Adaptation to climate change

Before 1992, the concept of "adaptation" was used only infrequently with relation to climate change or environmental risks. However, the Intergovernmental Negotiating Committee, while drafting the United Nations Framework Convention on Climate Change (UNFCCC), formulated the term in 1992 as one of two categories of response to climate change: mitigation and adaptation.

In recent years, the concept of adaptation has been gaining momentum in the international community, both in developed and in developing countries. This is because, regardless of the outcome of continuing and heated discussion of how to curb

greenhouse gas emissions to mitigate trends in climate change, the warming effect arising from the greenhouse gases that have already accumulated in the outer atmosphere will not weaken — at least in the coming century.[1]

Although the term "adaptive behavior" was first officially used in 1992, humans have been adapting their behavior to climate change since time immemorial (Schipper and Burton 2009). What is entirely new to recent human history, however, is that the current trends associated with climate change have the capacity to push us beyond the limit of our coping capacity, requiring us to change the way we act and behave as individuals and societies. In regions where climate hazards such as droughts, floods and cyclones/hurricanes cause massive loss of life, human dislocation and suffering, the need to cope now with today's climatic variability does not allow the luxury of contemplating possible climate changes several decades from now (Smithers and Smit 1997).

Overall, there are two distinct reasons why adaptation is important. First, the impacts of climate change can be modified by adaptations of various kinds (Smit 1993). Second, adaptation is now considered to be an important policy option or response strategy in relation not just to climate change but to development (Smit et al. 2000). Moreover, the seriousness of the effects of climate change on the world's vulnerable populations means the issue of adaptation must be incorporated into development planning and implementation in an effort to achieve the Millennium Development Goals (MDGs).

This paper examines the concept, principles and issues of community-based adaptation practice by paying close attention to the concept of adaptation to climate change and vulnerability.

Types of adaptation

There are several types of adaptation: "autonomous" and "planned" (Pittock and Jones 2000); "reactive" and "proactive/anticipatory"; "short term" or "longer term"; "localized" or "widespread" (Smit et al. 2000; Agrawal 2008); and "targeted" and "integrated" (Agrawal 2008). The main focus of this paper is on planned, proactive/anticipatory, longer-term and localized adaptation measures.

However, an important distinction needs to be made between short-term and longer-term measures. Some scholars argue that short-term measures cannot be considered to be "adaptation". If proposed "adaptation" measures are merely short lived and consistent with existing management practices, it would be preferable to call them "adjustment" measures. Measures that involve strategic or entrepreneurial actions, which can result in a fundamental change in the nature or structure of personal, communal and societal behavior, should be termed adaptation (Smithers and Smit 1997).

This point is important because quite often what is termed "adaptation" (and related projects) only involves adjustment measures that do nothing to alter the status quo of a community, including its power structure, gender empowerment, decision-making process and devolution of responsibility and authority. Coping strategies, which are defined as "the bundle of poor people's responses to declining food availability and entitlements in abnormal seasons or years" (Davies 1993), are one possible example of such measures. Coping is thus defined as a short-term response to an immediate and frequently occurring decline in access to food. Adapting, in contrast, means making a permanent change to the many ways food is acquired, irrespective of the year in question (Ibid). This paper focuses on adaptation, not short-term, crisis-induced responses that may not generate lasting effects on the resilience of the population.

Climate change, climate variability and extreme events

With the recent surge in climate-related discussion, studies, projects and normative debates, the term "climate change" is seen everywhere but few writers make a clear distinction of the time-frame involved. Broadly speaking, climatic conditions can fall into three temporal categories: (1) climate change, as reflected in long-term trends in, or scenarios pertaining to, mean temperatures and related normal climatic conditions; (2) variability in normal climatic conditions over periods ranging from a few years to several decades; and (3) isolated, extreme events or catastrophic weather conditions, such as floods, droughts or storms (Smit et al. 2000). In reality, these categories are interrelated and do not exist independently of one another. But it is important to distinguish them because adaptation should be quite different according to each temporal category, for example, an isolated extreme event as opposed to recurring anomalous conditions or a gradual change in an overall climate regime as reflected in changes in long-term mean conditions.

Climate trends, predictions and scenarios over a range of 100 years, often presented through the works of the Intergovernmental Panel on Climate Change (IPCC), are related to the first, long-term temporal category; stories and findings of shifts or changes in frequency and/or probability distributions of "recurring" droughts, floods and storms in the period up to three decades are in the second category; and outliers and any "isolated" extreme events (i.e. not including "recurring" extreme events such as droughts, floods and storms) are of the third temporal category. The distinction between climatic variability and climate change is critical because one affects the range and frequency of the shocks absorbed or adjusted to by a society, whereas the other alters the entire resource base (Ribot et al. 1996). The problems of climatic variability are here today and can be seen, whereas scientific investigations of

climate change have focused on projecting net or average change, rather than climatic variability within it. And it is this climatic variability that is the central cause of vulnerability among people and communities.

Vulnerability and non-climatic conditions

Vulnerability is defined as the "degree to which a system is susceptible to injury, damage or harm" (Smit et al. 2000) — a "system" here comprises a group of people, community or nation, an ecosystem or a society as a whole. Vulnerability is a function of a number of interlinking factors that are not necessarily linked to climate impacts. Climate events themselves do not cause vulnerability. For instance, when a community faces drought or flood, it is not so much the events themselves that are alarming but the community's vulnerability to the consequences associated with them, for example, hunger, famine, dislocation from land or livelihood, economic loss and the loss of ecological assets. Thus vulnerability is a function of the relative status of socio-economic groups, comprising such factors as income, class, caste, clan, religion, political party, livelihood, race, ethnicity, family, gender and age, as well as the degree of development (Ribot et al. 1996).

While China and India were once frequently beset by drought and famine, they now appear to have reduced their vulnerability — even though the climate variability affecting these countries has not changed — due to their efforts to change and improve political, social and economic factors. This leads to the current notion of vulnerability, i.e. that although food shortages occur elsewhere in the world, famines only seem to occur in Africa (Sen 1987).

Adaptation is, therefore, a process whereby a community responds to non-climatic conditions by reducing vulnerabilities. Since vulnerability is highly contextual in its

Table 1. List of indicators of vulnerability at different levels

National/regional level (indicators)	Community level (variables)	Household level (variables)
• population with access to sanitation	• poverty	• poverty
• literacy rate (15- to 24-year-olds)	• inequality	• dependence on risky resources
• maternal mortality	• social capital	• asset portfolios
• literacy rate (over 15 years)	• social entrepreneurs	• occupations
• caloric intake	• institutional interconnections	• skill sets
• voice and accountability	• institutional density	• information availability
• civil liberties	• institutional effectiveness	• labor availability
• political rights	• gender composition	• institutional access
• government effectiveness	• cultural factors (whether indigenous)	• literacy
• literacy ratio (female to male)	• age composition	• gender balance
• life expectancy at birth		• age distribution

Source: Agrawal 2008

nature, the indicators of vulnerability are different at different levels of society. Table 1 shows a list of indicators of vulnerability at the household, community and national or regional levels. From this list of indicators, it seems clear that one cannot treat vulnerability to climate risks as a standalone or independent phenomenon; it must take into consideration all other non-climatic conditions.

All these levels (i.e. national, community and household levels) interact with and influence each other, which makes adaptation to climate variability and change an unusually complicated matrix of mutually influencing elements.

Community-based interventions

The gradual changes in the global climate and its variability are making a disproportionately strong impact on the world's poor and vulnerable communities. When these impacts intensify, poor communities become unable to cope with climatic variability as well as the future risks associated with global climate change. However, until recently, most efforts to help countries adapt focused on national planning and top-down approaches based on climate-change modelling. Remarkably little attention has been paid to the ways that, for decades, poor people have been coping with climate variability and extremes (Reid et al. 2009).

Since the degree to which people are associated with vulnerability tends to depend on location and cultural factors (shown in Table 1), adaptation to climate impacts is inevitably and unavoidably "local" (Agrawal 2008). Community-based, localized adaptation measures are therefore crucial to any endeavor to reduce vulnerabilities.

Unfortunately, most bilateral and multilateral agencies are offering less support for localized action and local organizations and more support for sectors and budgets. In general, the kind of official development assistance offered by these agencies is not designed to support local organizations and processes. One example is an international funding agency that measured the success of a household loan program by how many loans were provided, not by how many households were made able to *avoid* taking out loans (Satterthwaite 2005). In terms of adaptation, the focus of assistance has often been sector and budgetary support, almost all of which is channeled to the national governmental authority alone. This is not to suggest that all bilateral/multilateral aid should flow to local organizations[2] but, because local-level actions and agendas have been scarcely supported for their activities on the ground, a greater emphasis should be placed on shifting the focus toward more local activities.

Since key vulnerable groups are often excluded from making decisions about the management of climate risks, poor households and communities are often forced in live in hazardous areas that put them at risk of flood, drought and storms (Adger 2003). It is therefore vital to help these communities adapt to such risks arising from climate

variability and climate change.

Community-based adaptation

Community-based adaptation (CBA) aims to enable communities to understand and integrate the concept of climate risk into their daily lives in order to cope with and respond to immediate climate variability and long-term climate change (Ensor and Berger 2010). It is a community-led process — based on communities' priorities, needs, knowledge and capacities — which should empower people to plan for and cope with climate impacts. Because of their localized nature and prioritization, CBA projects may look quite similar to livelihood development projects. However, what distinguishes CBA from "development as usual" livelihood projects is the fact that CBA attempts to factor in the potential impact of climate change on livelihoods and vulnerability by using local and scientific knowledge of climate change and its likely effects (Reid et al. 2009).

However, one can say that CBA does not differ much from disaster risk-reduction (DRR) work. This is because at the household or community level, the distinction between DRR, adaptation to climate change and poverty alleviation tend to converge on the same objective, i.e. "the security and well-being of people's lives, livelihoods and assets" (Reid et al. 2009). In fact, DRR work can be seen as an excellent entry point to CBA, since the immediate risk of disaster (and the perception of it) is often the most pressing issue facing vulnerable communities and households.

There is another confusingly similar concept and practice related to CBA that much predates it. Community-based natural resource management (CBNRM) refers to "local collaborative regimes of natural resource management with defined membership and jurisdiction" (Murphree 2000). What distinguishes community-*driven* NRM from community-*based* NRM is the devolution of responsibility and authority toward NRM — there is a large difference between decentralization and devolution. Under decentralization, one merely asks a community and its members to implement actions without giving them any authority — rather like outsourcing in business. But under devolution, the community and its members will also possess the authority to decide the course of any actions or directions, as long as the community is responding to its own constituencies and demand at a local level, taking full control of where they want to be heading. Thus a community-*driven* approach corresponds to decentralization and a community-*based* approach corresponds to devolution. The current pool of literature relating to CBA, however, does not seem to focus on this difference, which poses the risk of confusing mere community-driven activities with CBA and mistaking decentralization with devolution.

The participation of civil society — defined here as voluntary civic and social

groupings that exist in a particular context, including community-based organizations, local, national and international NGOs and faith-based organizations — has been deemed central to any CBA approach seeking to help vulnerable communities adapt to climate change since the late 1980s (Ribot et al. 1996). This is because local organizations have the potential to affect adaptation and people's livelihoods in three important ways: (1) they structure environmental risks and variability and thereby the nature of climate impacts and vulnerability; (2) they create an incentive framework in which outcomes of individual and collective action unfold; and (3) they are the media through which external interventions reinforce or undermine existing adaptation practices (Agrawal 2008). A failure to understand and include such organizations in the design and implementation of CBA risks making CBA non-sustainable. The strong presence of local organizations — and volunteers who support these organizations in some capacity — is needed to realize self-replicating and sustainable CBA practices even after the project intervention and funding has ended.

According to Huq and Reid (2007), CBA should have the following characteristics:

- *Gaining trust.* Since by nature CBA incorporates climate-related risks, projections and scenarios derived from outside the target communities, it is important to gain the trust of the communities. This may involve spending a long time with the community or using trusted local organizations for mediation. Without first winning trust, there can be no steps forward.
- *Communication.* The notion and science of climate change is strange to many, particularly targeted people on the ground. It is therefore important to use as much localized material as possible, translating your material into the local language or foregoing written materials altogether, depending on the local situation. Traditional means of communication, such as art and theater, or modern methods, such as video, can also be used.
- *Learning about community.* After (and only after) obtaining the cooperation of local organizations and targeted communities, the process of identifying what adaptations are appropriate can start. This requires learning initially about the community's indigenous capacities, knowledge and practices of coping with climate hazards in the past. New activities, technologies or practices can then be introduced.
- *Development project.* Rather than a standalone "climate change" project, CBA works like any standard development project after the adaptation measures have been identified. The emphasis is placed not on what the community is doing but why and with what knowledge.
- *Learning and practice.* Since by definition CBA is highly localized and involves community-specific situations, there are very few, if any, references that practitioners can work with in the field. In addition to conceiving innovative

CBA practices, learning by doing is still the surest way to develop community-based adaptation measures. It is thus important to allow as many pilot projects and activities to be carried out as possible to share the experience and knowledge gained.

Summary of CBA cases

This section introduces a number of case studies selected from the CBA activities undertaken as part of the United Nations Development Programme (UNDP), which aims to strengthen the resilience of communities to the adverse effects of climate change. This five-year global initiative is funded by the Global Environmental Facility (GEF) and uses the Small Grants Programme as its delivery mechanism. The CBA program, which began operating in late 2009, is a unique global program comprising a number of community-based projects in 10 participating countries (Bangladesh, Bolivia, Guatemala, Jamaica, Kazakhstan, Morocco, Namibia, Niger, Samoa and Vietnam). The CBA program has various partners, including the UN Volunteers (UNV) program (which enhances community mobilization, highlights volunteers' contributions and ensures inclusive participation in the projects) and receives funding from national governments including those of Japan, Switzerland and Australia.

There are broadly five steps that govern how each CBA project is formulated and implemented:

1. *Scoping community project.* The key actor in formulating a CBA project is either a local NGO or a community-based organization that represents the interest of a group of vulnerable community members, such as small-scale farmers or fishermen. Such local project proponents play an instrumental role in designing a project proposal. They collect information on local climate impacts and scientific assessments of the local areas, drawing on the local expertise of members of local government, other local NGOs, national hydrological and meteorological services. The findings of such external reviews and discussions with relevant stakeholders are used to form the project baseline for climate impacts in the local areas.
2. *Assessing current vulnerability.* This is done by assessing the manifestations of current climate variability at the local level in the context of livelihoods, geographic location and socio-economic vulnerability. One important assessment to be conducted during this step is called Vulnerability Reduction Assessment (VRA). VRA is a simple participatory tool that can be used in the localized context. It is designed to measure the changing vulnerabilities of communities to climate change, including its variability.
3. *Assessing future climate risks.* This step uses the VRA exercise to define local vulnerability to future risks compared with national vulnerability, which is derived

from climate scenarios and projections. It asks how severe the impacts of climate-change risk would be at a certain community level as opposed to the national level and to what degree the community is prepared to address climate-change risk with project intervention and current coping mechanisms.

4. *Formulating an adaptation strategy.* In this step, community members determine how to operate the project concept by removing various barriers to implementation and uptake of identified adaptation options. It is for the community to formulate the adaptation strategy, which results in the actual design of the project corresponding to local needs.

5. *Continuing the adaptation process.* After approval by the Small Grants Programme National Steering Committee in each country, proposals will move to implementation. During implementation, there will be several more VRA consultations to make sure there is enough flexibility in the project's implementation to allow changes to be made to the project activities and management. In the mean time, lessons learned during implementation are shared and taken into account for national adaptation policy initiatives.

(UNDP 2007)

Ensuring the full participation of community members and relevant local actors throughout all of the steps above is essential to all the ongoing UNDP CBA program case studies (see Table 2). Even though project design and interventions are highly localized, the UNDP CBA program is unique in that it is designed to take knowledge and experience gained locally and then apply it at a global level.

By studying these preliminary cases,[3] it is possible to extract emerging trends that are vital to CBA projects:

- *New practices and techniques with livelihood benefits.* While the introduction of new climate-resilient practices and techniques to vulnerable communities is a sure way to increase their resiliency and adaptability, CBA activities will not attract much interest from — or be sustained by — local people if they do not bring concrete benefits to their daily lives. Since life improvement is often a top priority for vulnerable communities, such double objectives should be met within each project framework.
- *"Vertical" integration from local assessment to policy level.* One factor that makes CBA a unique and also fairly complicated area of practice is the necessity of incorporating climate science, scenarios and projections (top-down information provided by external groups of people) into a localized CBA activity. Such a top-down information flow needs to be balanced by a simultaneous flow of information from bottom to top. Some of the cases shown in Table 2 involve active partnership with committees of public-sector stakeholders, ensuring local knowledge is fed into municipal, district

Table 2. Summary of selected cases from the UNDP CBA program

Project title (country)	Vulnerability	Objective	Activities
Case 1. Community water resource management as an adaptation strategy in Vallegrande (Bolivia).	Communities depend heavily on agricultural products and are particularly vulnerable to changing precipitation patterns and water availability.	To enable more intensive agriculture, thereby reducing land degradation by using available water more effectively as precipitation declines and becomes more erratic.	Installing irrigation systems from low-flow springs; protecting water collection areas and water quality; establishing communal property agreements for water supply; creating water ponds.
Case 2. Adaptive agroforestry in the Saipina municipality (Bolivia).	Poorer communities depend on irrigation system from a nearby river, whose supply is threatened by erratic rainfall patterns.	To reduce the vulnerability of agricultural production and environmental conservation by improving water management and food security.	Improving fruit crop production with soil conservation and contour planting; water irrigation and management.
Case 3. Land preservation measures to combat climate change pressures in Cockpit Country Watershed (Jamaica).	Communities living in the watershed — one of the country's last wildernesses — are affected by flooding, which causes erosion and damage to local agricultural land.	To stabilize and reinforce riverbank slopes to protect against the loss of agricultural lands.	Constructing "natural" stone barriers; establishing culverts to divert floodwaters.
Case 4. Reducing erosion and landslide risk through sustainable agriculture (Jamaica).	Communities carrying out unsustainable slash and burn practice in Woodford and Cascade towns are experiencing the decline of agricultural production, which is exacerbated by changing rainfall patterns and drought.	To increase farmers' capacity to adapt to climate change by promoting sustainable agricultural practices.	Training farmers in effective soil conservation techniques; promoting alternative livelihood practices; planting trees; involving government bodies for policy integration.
Case 5. Adjusting community agricultural practices to reduce climate-change risks in the Omusati region (Namibia).	Communities in an extremely arid zone are experiencing declining water availability and changing rainfall patterns.	To develop resilient farming practices and improve natural resource management.	Planting drought-resistant tree species; demonstrating resilient soil conservation methods; promoting small-scale rainwater harvesting methods; making hand-made wells.
Case 6. Adapting pastoral and agricultural practices to the realities of climate change (Niger).	Villagers of Roumbou in the Maradi region near the Sahara desert face desertification, exacerbated by changing rainfall patterns and temperature.	To foster sustainable water management, agricultural and pastoral practices.	Introducing alternative crop production methods; distributing quick-maturing seeds; rehabilitating traditional wells; creating a community-managed grain bank.
Case 7. Adapting to climate change with resilient agricultural techniques (Niger).	Located near the Tarka Valley, one of the nation's few remaining fertile areas, Roumbou municipality faces desertification, exacerbated by changing rainfall patterns and temperature.	To develop climate change-resilient livelihood practices by fostering grassroots ownership and local decision making.	Promoting farming techniques with enhanced yields; introducing quick-maturing seeds; improving soil fertilization; creating a community-managed grain bank; providing animal-drawn ploughs and offering farming input.
Case 8. Increasing community resilience to flooding and rising sea levels (Samoa).	Agriculture and fishing dependent communities in Satoalepai and nearby villages face more frequent cyclones, heavy rainfall and flooding.	To reinforce the resilience of the local wetland ecosystem.	Upgrading road access with box culverts; rehabilitating fragile wetlands; improving water flow within wetlands.

Source: author, based on UNDP (2010) "Community-Based Adaptation Fast Facts"

and national planning processes.

- *Voluntary community participation.* Gaining trust is an essential element of CBA and one sure way to realize it is through community mobilization and voluntary participation. The volunteers working in these vulnerable communities come from different communities in the same country, which enables them to spread an "internal" voice within the communities. This gives them a greater influence in convincing the communities of the actual benefits of CBA work and is in contrast to many bilateral/multilateral projects necessary, which use external interventions and activities that are specifically tailored "for" and "toward" communities.

Principles of CBA

Regardless of the type of climate risk that CBA projects address and the nature and degree of vulnerability experienced by the communities targeted, there is a set of principles that needs to be taken into consideration. It is true that the entire practice of CBA is still in its infancy. However, the following set of principles (Ensor and Berger 2010) can be helpful when designing and implementing CBA.

First, it is important to prioritize the adaptation and livelihood needs of the most vulnerable groups of people — particularly those who are more marginalized inside communities, such as women and children and indigenous people — as well as vulnerable ecosystems. The "mindset" of traditional official development assistance (ODA) projects has to be changed for the practice of CBA, where even an intervention project's goal is decided upon by the most vulnerable members of targeted communities. Supporting CBA requires a shift in focus from the national to the local and the external to internal.

Second, CBA project activities and timeframes will only be determined through the local assessment of risks, needs and circumstances. The process of discussion and identification can be helped greatly by external facilitators but if a CBA project is framed forcefully by an external community, it ceases to be CBA. Bilateral/multilateral agencies must become more flexible and patient if they intend to fund CBA activities. Designing the project's objectives, outputs and outcome before implementation — tasks which have traditionally been done for good reason by many bilateral/multilateral agencies — may jeopardize the purpose of CBA.

Third, the right CBA work needs to maximize the ownership of the adaptation planning and implementation process (including the disbursement of adaptation finance) at national, regional and community level to ensure participatory planning and implementation at a local level.

Fourth, planned action as part of CBA work should be well documented and open

to public scrutiny and discourse. There is also a strong need to ensure key stakeholders — especially vulnerable and marginalized groups, women and indigenous people — are represented at every stage of the process as appropriate.

Fifth, a learning-by-doing approach and process must be respected at all times. This recognizes the fact that, at the local level, climate prediction cannot be presented with much certainty and it promotes adaptation measures that are based on a no-regret, precautionary principle. This approach is based on learning by doing, so active communication and lesson sharing are crucial to equip a series of otherwise scattered local CBA case studies with a robustness and applicability that can go beyond the targeted, geographically limited areas to the inter-community, district, national and international levels.

Issues surrounding CBA practice

CBA's relative infancy and its inherent difficulties as a practice have thrown up a number of issues.

The first of these relates to the definition of "community" itself. The concept of community is "one of the most vague and elusive concepts in social science and... continues to defy precise definition" (Sjoberg 1984). CBA, along with many other disciplines covering community-related research, rests on the assumption of the existence of "communities" — small-scale human groupings bound socially by a common cultural identity, living within defined spatial boundaries, interacting on a personal rather than bureaucratic basis and having an economic interest in the common pool interests of the area. But, in fact, such examples rarely exist in areas that are culturally heterogeneous, economically stratified, whose boundaries are porous and where social cohesiveness is fragile (Murphree 2000). "Community" in such cases is elusive and is characterized as much by internal differences (in the priorities, needs, vulnerabilities and capacities of the people) as by commonalities (Reid et al. 2009). Treating and recognizing a community as one static target for CBA may create a serious gap in understanding between the project developers and the members of the community.

The issue of devolution — already mentioned briefly in relation to community-based natural resource management — can also cause problems in CBA practice. In contrast to CBNRM, which does not necessitate the complete withdrawal of the state from local affairs, CBA should call for the state's role to change from being directive and inhibitive to being facilitative for local organizations and vulnerable populations. Achieving this goal is time consuming, at best. At worst — where there is no dedicated discussion of where CBA leads to in terms of the devolution — there remains a risk that CBA will be merely a short-lived fad among the development bilateral/multilateral

agencies and will fail to put poor people in the driving seat.

Attempts to take successful CBA initiatives and scale them up worldwide can also prove problematic. While CBA initiatives are increasing in number and information about the activities is being gathered and shared, it remains a challenge to translate this into improved policy responses and initiatives that can be implemented worldwide (Reid et al. 2009). The rosiest picture is for adaptation to take place across a much wider area while being rooted in the reality of small-scale community livelihood situations. Even though the synthesis between the global implementation of an adaptation program and community-based adaptation activities is the ultimate goal of CBA, such synthesis is often too difficult in reality.

Inadequate monitoring can present another obstacle to the successful delivery of CBA because community-based and civil-society monitoring is essential to ensure the appropriate resources reach the most vulnerable communities. Monitoring of planned activities is crucial at the community level. A national stakeholder forum will require regular written and field-monitoring-visit reports to enable governments to be held accountable to the funding body (Ensor and Berger 2010). However, this is much easier said than done. In the UNDP-CBA cases presented in Table 2, a marked absence of monitoring activities has resulted in minimal reporting of progress or evaluation activities to the central level of management. This is because the CBA projects in each country are owned and participated in by community members and respective non-governmental and community-based organizations. Their involvement often means the projects need much more time than the original schedules allowed.

The issue of participation can also be problematic. Reid et al. (2009) have shown that the priorities and interests of outsiders often override those of communities and that communities tend to be imposed upon rather than empowered to take control. But at the same time, adaptation can only be effective and sustainable when it can draw on the knowledge and priorities of local people, build on their capacities and empower them to make changes themselves.

Incorporation of ideas from above presents another obstacle to successful CBA implementation. As is often pointed out, CBA differs from other community-based work in that it must incorporate difficult climate-science-related scenarios and projections into a localized prioritization and planning process. Since, in general, there is very little awareness of climate change at grassroots level, incorporation from above (or at least from outside) must be done. Where outside agencies are driving this agenda, they can find themselves transmitting information in a top-down manner that goes against the tenets of CBA (Van Aalst et al. 2008). This is a highly sensitive issue for which no one has yet proposed a clear solution.

The way forward

The key words here are flexibility and a shifting mindset. After looking at various characteristics of, and issues relating to, adaptation to climate change and CBA practices, what happens when, after years of preparation, a development agency's focus and timeframe do not match the priorities and plans of targeted communities? The traditional behavior of bilateral/multilateral development agencies must change and become flexible enough to take account of community-raised priorities and timeframes. Therefore, bilateral/multilateral agencies must turn to local organizations and international NGOs that are interacting directly with vulnerable people on the ground.

But for this to occur, there must be a shift in the professional behavior and attitude of development practitioners. The CBA type of participatory process requires time to develop and needs flexible funding since it is likely that most properly implemented CBA projects will not fit in with the agency's timetable or budget or the outcomes demanded by governments and other organizations (Reid et al. 2009).

Nevertheless, the fact that CBA is in its infancy in terms of structure and management means it presents a rare opportunity. It offers a new way of thinking and a chance to replace externally defined, agenda-driven, top-down development practices with methods that empower people rather than dictate to them.

Notes

[1] One type of greenhouse gas, carbon dioxide, is known to stay in the atmosphere for as long as 100 years, during which time greenhouse effects continue to occur.

[2] An extreme case can be seen in Haiti. Ever since President George H. W. Bush decided that all the billions of dollars for bilateral aid should go to NGOs and community-based organizations, bypassing the central authority (i.e. the president of Haiti) in the late 1990s, the human resource and capacity of the public sector plummeted and the country has now the largest number of NGOs per capita in the world. This situation is also partly responsible for the lack of success of the rehabilitation efforts undertaken after the great earthquake of January 2010.

[3] UNV has engaged with the UNDP CBA program since its inception. The author's role in the organization has been to provide technical support and coordination of volunteers deployed for the implementation and community mobilization and sensitization component of the CBA program. The emerging trends described in this paper are drawn from the author's personal experience of dealing with CBA projects. More detailed public information of the projects can be found at www.undp-adaptation.org/project/cba

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